

ABSTRACT

This invention relates to methods for rejuvenating normal somatic cells and for making normal somatic cells of a different type having the same genotype as a normal somatic cell of interest. These cells have particular application in cell and tissue transplantation. Also encompassed are methods of re-cloning cloned animals, particularly 10 methods where the offspring of cloned mammals are designed to be genetically altered in comparison to their cloned parent, e.g., that are "hyper-young." These animals should be healthier and possess desirable properties relative to their cloned parent. Also included are 15 methods for activating endogenous telomerase, EPC-1 activity, and or the ALT pathway and/or extending the life-span of a normal somatic cell, and other genes associated with cell aging and proliferation capacity.